PROCEEDINGS OF THE
ROYAL ENTOMOLOGICAL SOCIETY
OF LONDON

SERIES C. JOURNAL OF MEETINGS

Volume 21. No. 2, 1956

ORDINARY MEETING

Wednesday, 4th April, at 5.30 p.m.

AGENDA.

1. Confirmation of the Proceedings of the Ordinary Meeting held on 7th March, 1956.

2. Recommendations of candidates for Fellowship. First reading.

3. Recommendations of candidates for Fellowship. Second reading.

4. Announcement of election of new Fellows.

5. Additions to the Library [see p. 8].

6. Admission of Fellows.

7. Exhibits.

Fellows are particularly requested to bring suitable exhibits to the Meeting even though it may not be possible to announce their intention to do so beforehand.

> *Note.*—To avoid congestion in the Library and to enable exhibits to be displayed to greater advantage, a table has been placed in the meeting-room for this purpose. Fellows are asked to place their exhibits on this table, with a suitable explanatory note, as soon as possible on the afternoon of the meeting, so that they are available for inspection there before the meeting opens.

8. Communications.

1. Dr. H. E. Hinton.

A problem in taxonomy.

[Abstract.]

A single specimen of an unknown group of insects found in a paddy field in Borneo will be discussed. The insect is a wingless, eyeless, larva-like adult. It remains to be decided whether it is more closely related to the Megaloptera-Neuroptera or to the Coleoptera.

2. **Dr. G. L. M. Pleskot** (a visitor).

Observations on the egglaying and larval development of *Atherix* (Diptera : Rhagionidae).

[ABSTRACT.]

Eggmasses of a population of *Atherix* sp., found in the neighbourhood of the Biological Station, Lunz, Austria, will be exhibited. They differ somewhat from the eggmasses of *Atherix ibis* so far known, as there are no big pearshaped clusters of twigs, leaves, flies and eggs but only single layers of eggmasses covered with dead flies and limited to single leaves. Other examples will be shown.

The shape of the single eggmass, the first, air-living larval stage and the second, aquatic larval stage, will be shown. The full grown larva shows clear differences from the larva of *Atherix ibis* (and from the larva of *Atherix marginata* as well).

This *Atherix* sp. of Lunz shows all the characters of *Atherix femoralis* Loew. Because of the observed differences of the larvae and the egglaying habits the question may arise whether Loew's *Atherix femoralis* should be reinstated as a distinct species.

TEA will be served in the Library before the meeting.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 7TH MARCH, 1956.

Dr. W. J. HALL, C.M.G., M.C., President in the Chair.

Present, 69 Fellows and 6 Visitors.

The minutes of the Ordinary Meeting held on 18th January and of the Annual Meeting held on 1st February, 1956, were confirmed and signed by the President.

The President announced that he had nominated Mr. Paul Freeman, Dr. H. E. Hinton and Mr. W. H. Potts as his Vice-Presidents for the coming year.

The names of the following candidates for election were read for the first time : Dr. Monica Mary Betts ; Mr. William Zacheus Coker, B.Sc. ; Dr. Isaac Harpaz ; Mr. Henry Theodore King ; Mr. John Antony McFarlane, B.Sc. ; Mr. Donald Martin Minter, B.Sc. ; Dr. Surendra Deo Misra ; Mr. Alan Arthur Savage ; Mr. Peter John Smart ; and Mr. Michael Richardson Smith, B.Sc.

For the second time (taken as read) : Mr. Fred Ashman ; Mr. Peter R. Boyce ; Dr. Victor Horace Chambers ; Mr. Bruce Richard Champ ; Mr. Ram Nath Katiyar ; Mr. Angus Wilson Ritchie McCrae ; Mr. George Mack ; Mr. John Robert Parry-Williams ; Dr. R. Rakshpal ; Mr. Ghanagam Narasimha Rao ; Mr. Thomas Stevenson Robertson ; Mr. David Stanley Saunders ; and Mr. Stanley Brice Wakerley, B.Sc.

The Secretary read the names of the following newly elected Fellows of the Society: Dr. Shujaatul Akbar, M.Sc., Ph.D., University of Sind, Hyderabad, W. Pakistan ; Mr. Philip Blasdale, 10, Quarry Hill Road, Ilkeston, Derbyshire ; Mr. Michael James Delany, Department of Zoology, The University, Glasgow, W.2 ; Mr. Roy Miller Harfield, B.Sc., Badingham College, Fetcham Park, Leatherhead, Surrey ; Mr. Gordon William Heath, B.Sc., Grassland Research Institute, Hurley, Maidenhead, Berks. ; Mr. Eric Thomas Hurlock, B.Sc., 52, Larkfield Avenue, Kenton, Harrow, Middlesex ; Mr. Kuttamathiathu Joseph Joseph, M.Sc., Laboratoire d'Evolution, 105, Boulevard Raspail, Paris VIe, France ; Mr. Graham John Rose, B.Sc., 108, St. George's Square, London, S.W.1 ; Mr. Santokh Singh, School of Entomology, St. John's College, Agra, India ; Mr. Gerald Webbe, 46, Chapel Street, Pontnewydd Cwmbran, Monmouth.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. D. Bryce, Mr. H. E. G. Evans, Mr. C. P. Friedlander, Mr. A. Hitchon, Mr. E. T. Hurlock, Mr. T. Lewis, Mr. S. C. Saxena and Mr. H. F. van Emden signed the Obligation Book and were admitted Fellows of the Society.

Dr. A. N. Clements exhibited microscope slides showing a paired organ found in the heads of mosquitoes and other Diptera Nematocera. He said that workers on the histology of these insects had known of the organ for a long time. It had been called a degenerate ocellus (Thomson, M. T., 1905, *Proc. Boston Soc. nat. Hist.* **32** : 145) and more recently a sense organ possibly sensitive to changes in atmospheric pressure (Day, M. F., 1955, *Aust. J. Zool.* **3** : 331).

The organ, in fact, appeared to be a blood pump supplying the antennae. It consisted of a muscle, which had previously been described as a nerve, attached at one end to the aorta between the lobes of the brain and at the other end to a sac lying between the compound eyes and the antennae. The sac contained a valve and from the sac a blood vessel arose which ran to the antenna. Extension of the sac would allow blood to enter it through the valve and contraction would drive the blood out through the antennal vessel.

Mr. W. V. Harris exhibited living specimens of *Zootermopsis angusticollis* (Hagen), the rotten-wood termite of the West Coast of North America. He recalled that in October, 1955 [*Proc. R. ent. Soc. Lond.* (C) **20** : 36–37], when exhibiting specimens of the dry-wood termite, *Kalotermes* nr *jouteli* Banks, obtained from timber imported from Santo Domingo, he had remarked that a second species, *Zootermopsis angusticollis*, had arrived at about the same time but unfortunately the infested wood from which it was taken had all been destroyed before the source could be tracked down. As the result of an article in a timber periodical in which he had expressed regret at missing the opportunity of culturing *Zootermopsis*, Mr. Robert D. Graham of the Oregon Forest Products Laboratory had recently sent a colony. The termite was reputed to be a useful laboratory animal and is maintained in cultures in North America for long periods. It feeds on Douglas Fir and other woods, is large and easily handled and does not require specially high temperatures. It also provides a useful source of large protozoa for demonstration purposes.

A tube of workers of *Reticulitermes*, a genus much favoured by workers on the Continent, was also shown.

Mr. T. E. Mittler gave a paper on the nitrogen economy of aphids, an abstract of which appeared on page 2.

In the discussion which followed, Dr. H. E. Hinton doubted whether fixation of nitrogen was of any significance to aphids. Recent experiments with other insects had shown that, although their symbionts were also able to fix atmospheric nitrogen *in vitro*, there was no evidence that they actually did so in living insects. Dr. Mittler replied that Tóth had shown that atmospheric nitrogen would only be fixed by aphid symbionts in a culture medium free of combined nitrogen. It seems unlikely therefore that fixation of nitrogen occurs within an aphid's body.

Dr. R. C. Rainey asked if Dr. Mittler could give further support to his statement that the volume of honey-dew excreted by the aphids could be regarded as about equal to the volume of sap ingested. Some loss due to evaporation or transpiration would be expected. More nitrogen would therefore be available to the aphids than actually stated. Dr. Mittler replied that even in a dry atmosphere and off their host plant the aphids lost water by evaporation at only one-seventh of the rate they actually excreted honey-dew when feeding normally .

Mr. E. B. Britton asked how the nitrogen in sap samples had been estimated. Dr. Mittler replied that nitrogenous matter was converted to ammonium sulphate by sulphuric acid, then mixed with an excess of strong alkali in a closed cell. The ammonia given off was absorbed by a drop of hydrochloric acid suspended from the lid of the cell. The remaining hydrochloric acid was then titrated with standard alkali using a microburette.

Dr. J. S. Kennedy asked Dr. Mittler if he was satisfied that nitrogen fixation did not occur in adult aphids when they were producing young. Dr. Mittler showed curves covering the rate of nitrogen increase during the whole life of the insect, which indicated no evidence of any new process coming into action at the onset of reproduction.

Mr. D. Leston enquired whether the possession of symbionts could be correlated with the feeding habits and taxonomy of the Hemiptera. Mr. H. L. G. Stroyan replied that all the Aphididae and nearly all plant sucking Hemiptera contain mycetomes.

E. B. BRITTON, *Honorary Secretary.*

The next meeting will be held on 2nd May, at 5.30 p.m.

ADDITIONS TO THE LIBRARY.

Presented.

The Annual Review of Entomology. Edited by E. A. Steinhaus and Ray F. Smith. Vol. 1. 8vo. Stanford (Annual Reviews, Inc.), 1956. [The Publishers.]

Ansorge, W. J. *Under the African Sun.* 8vo. London 1899. [Sir Eric Cecil Ansorge.]

Beal, R. S. Biology and taxonomy of the nearctic species of *Trogoderma* (Coleoptera : Dermestidae). *Univ. Calif. Publ. Ent.* **10** (2) : 35–102. 1954. [Mr. B. Jobling.]

Corbet, A. S., and Pendlebury, H. M. *The Butterflies of the Malay Peninsula.* 2nd ed. rev. 8vo. Edinburgh and London (Oliver & Boyd), 1956. [The Publishers.]

Fairchild, G. B. Synonymical notes on neotropical flies of the family Tabanidae (Diptera). *Smithson. misc. Coll.* **131** (3) : 1–38, 1956.

Ferris, G. F. *Atlas of the Scale insects of North America.* Vol. VIII. 4to. Stanford (University Press), London (Geoffrey Cumberlege), 1955. [Geoffrey Cumberlege.]

Hanström, B., and others. *South African animal life* : *Results of the Lund University Expedition in* 1950–1951. Vol. 1. Large 8vo. Stockholm (Almqvist & Wiksell), 1955. [The Publishers.]

Kevan, D. K. Mc. E., *editor. Soil Zoology* : *Proceedings of the University of Nottingham Second Easter School in Agricultural Science*, 1955. 8vo. London, 1955. (Butterworth's Scientific Publications.) [The Publishers.]

Timberlake, P. H. A revisional study of the bees of the genus *Perdita* F. Smith. *Univ. Calif. Publ. Ent.* **9** (6) : 345–432, 1954. [Mr. B. Jobling.]

In addition, separates have been presented by Mr. N. D. Riley ; Mr. H. S. Leeson ; Dr. L. G. Higgins ; The Director, East African Tsetse and Trypanosomiasis Research and Reclamation Organisation ; Trustees of the British Museum ; Commonwealth Scientific and Industrial Research Organisation, Australia ; Dr. T. Clay ; Mr. E. B. Britton ; United States Department of Agriculture ; Mr. J. D. Bletchly ; Mr. J. E. H. Blackie ; Dr. J. L. Cloudsley-Thompson ; Dr. W. D. Hincks ; Mr. B. Jobling and Dr. B. P. Beirne.

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